United States Cancer Statistics: 2002 Incidence and Mortality

Executive Summary

The Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI), in collaboration with the North American Association of Central Cancer Registries (NAACCR), are pleased to release the fourth annual *United States Cancer Statistics* report. This report provides official federal government cancer statistics for cases diagnosed in 2002 and for cancer deaths that occurred in 2002. Cancer incidence statistics included in this report come from CDC's National Program of Cancer Registries (NPCR) and NCI's Surveillance, Epidemiology, and End Results (SEER) Program. Cancer mortality statistics are from CDC's National Vital Statistics System (NVSS).

Incidence data from 44 states, 6 metropolitan areas, and the District of Columbia are included in the report. The data obtained from NPCR and SEER registries in these areas cover 93% of the U.S. population. Mortality data from NVSS are presented for all 50 states and the District of Columbia and therefore cover 100% of the U.S. population.

Cancer incidence and mortality statistics are reported for 68 selected primary cancer sites and subsites for men of all ages and 72 selected primary cancer sites and subsites for women of all ages. These data are presented in tables and graphs in the following categories: (1) by geography: all areas combined, U.S. Census regions and divisions, states, and selected metropolitan areas and (2) by race and ethnicity: all races combined, whites, blacks, Asians/Pacific Islanders, American Indians/Alaska Natives, and Hispanics/Latinos. Age-specific analyses are also presented.

The childhood cancer section includes incidence data for more than 12,000 cancer cases and 2,000 cancer deaths among children and adolescents aged 19 years or younger. These data are presented by race and ethnicity, sex, age, and primary site, as well as by specific cancer types classified according to the *International Classification of Childhood Cancer* (ICCC).

The inclusion of cancer incidence and mortality data for American Indians/Alaska Natives is a new feature of this year's report. American Indian/Alaska Native incidence data are classified according to race information obtained from medical records and recorded in the registry. Additionally, NPCR registries linked their registry records with those of the Indian Health Service (IHS), which provides medical services to approximately 55% of the American Indian/Alaska Native population. This IHS linkage helps address racial misclassification in the registries. For mortality data, American Indian/Alaska Native race is reported as recorded on the death certificate.

Also new to this year's report is the inclusion of detailed malignant brain and central nervous system cancer incidence data. These data are grouped by age and sex, as well as by specific cancer type and subtype as defined by the Consensus Conference on Cancer Registration of Brain and Central Nervous System Tumors. In future publications, we plan to expand this list to include incidence data on benign brain and central nervous system tumors.

Age-adjusted cancer incidence and death rates, with 95% confidence intervals, are provided in each section. All rates in this report are age-adjusted to the 2000 U.S. standard population. Age-adjustment allows researchers to compare data across populations by controlling for the effect of age on populations with different age distributions. In this report, population estimates for 2002 were obtained from the 2000 U.S. Census and slightly modified by SEER for the Native Hawaiian population. These modified population estimates improve the accuracy of the rates for some racial and geographic populations. Readers should be cautious when interpreting comparisons between age-adjusted incidence rates and death rates because of differences in population coverage (93% for incidence and 100% for mortality). In addition, readers should not compare the rates published in this report with cancer rates that were calculated using different methods or standardized to different populations.

Major Findings

Rates are shown in parentheses where appropriate and are per 100,000 persons.

*Cancer Among Men**

Three most common cancers among men of all racial and Hispanic origin populations:

- **Prostate cancer** (161.2)
- **Lung cancer** (86.4)
- **Colorectal cancer** (61.3)

Three leading causes of cancer death among men:

- **Lung cancer** (73.5)
  - ➤ First among men of all racial and Hispanic origin populations.
- **Prostate cancer**
  - ➤ Second among white (25.8), black (63.0), and Hispanic (22.0) men.
  - ➤ Third among American Indian/Alaska Native men (15.7).

* All races combined rate is presented when ranking of cancer sites did not differ across race and ethnicity; race- or ethnic-specific rates are presented when ranking differed depending on race and ethnicity.

- **Colorectal cancer**
  - ➤ Second among American Indian/Alaska Native men (16.1).
  - ➤ Third among white (23.2), black (33.4), Asian/Pacific Islander (15.9),† and Hispanic (17.1) men.
- **Liver cancer**
  - ➤ Second among Asian/Pacific Islander men (15.9).†

*Cancer Among Women**

Three most common cancers among women:

- **Breast cancer** (124.9)
  - ➤ First among women of all racial and Hispanic origin populations.
- **Lung cancer**
  - ➤ Second among white (54.9) and American Indian/Alaska Native (32.9) women.
  - ➤ Third among black (50.3), Asian/Pacific Islander (26.7), and Hispanic (25.2) women.
- **Colorectal cancer**
  - ➤ Second among black (51.8), Asian/Pacific Islander (34.3), and Hispanic (34.9) women.
  - ➤ Third among white (43.9) and American Indian/Alaska Native women (26.8).

Three leading causes of cancer death among women:

- **Lung cancer**
  - ➤ First among white (42.6), black (40.2), Asian/Pacific Islander (17.6), and American Indian/Alaska Native (27.5) women.
  - ➤ Second among Hispanic women (14.8).
- **Breast cancer**
  - ➤ First among Hispanic women (15.7).
  - ➤ Second among white (24.9), black (34.1), Asian/Pacific Islander (12.9), and American Indian/Alaska Native (13.9) women.
- **Colorectal cancer**
  - ➤ Third among women of all racial and Hispanic origin populations (16.5).

* All races combined rate is presented when ranking of cancer sites did not differ across race and ethnicity; race- or ethnic-specific rates are presented when ranking differed depending on race and ethnicity.

† Colorectal cancer death rate for Asian/Pacific Islander men is 15.85; liver cancer death rate for Asian/Pacific Islander men is 15.86.

Cancer Among Children‡

The most common cancers in children aged 0–19 years:

- **Leukemia** (4.1)
  - ➤ Highest incidence rate found among children aged 1–4 years.
- **Brain and central nervous system cancer** (2.9)
  - ➤ Highest incidence rate of brain cancer found among children aged 1–4 years.

Leading causes of cancer death in children:

- **Leukemia** (0.8)
  - ➤ First among children aged less than 1 and aged 10–19 years.
- **Brain and central nervous system cancer** (0.7)
  - ➤ First among children aged 5–9 years.

Racial or Ethnic Variations§

All cancers combined, men:

- Incidence rates are highest among blacks (615.1), followed by whites (536.8), Hispanics (422.8), Asians/Pacific Islanders (324.3), and American Indians/Alaska Natives (267.2).
- Death rates are highest among blacks (322.9), followed by whites (236.0), Hispanics (163.9), American Indians/Alaska Natives (145.3), and Asians/Pacific Islanders (138.8).

All cancers combined, women:

- Incidence rates are highest among whites (408.9), followed by blacks (377.5), Hispanics (310.4), Asians/Pacific Islanders (264.5), and American Indians/Alaska Natives (215.4).
- Death rates are highest among blacks (190.9), followed by whites (161.9), American Indians/Alaska Natives (114.5), Hispanics (107.4), and Asians/Pacific Islanders (96.6).

Among the five races and ethnicities presented:

- American Indian/Alaska Native men have the lowest cancer incidence rates; however, Asian/Pacific Islander men have the lowest cancer death rates.
- White women have the highest cancer incidence rates; however, black women have the highest cancer death rates.
- American Indian/Alaska Native women have the lowest cancer incidence rates and the third highest cancer death rates.

‡ Rates presented are for males and females combined, all races combined, and children aged 0–19 years.

§ Race- or ethnic-specific rates are presented for all cancer sites combined.

Geographic Variations¶

Breast cancer:

- The incidence rate for the United States is 124.9; state incidence rates range from 109.0 to 147.8; approximately 53% of states have incidence rates at or above the national rate.
- The death rate for the United States is 25.5; state death rates range from 16.2 to 34.3; approximately 47% of states have death rates at or above the national rate.

Prostate cancer:

- The incidence rate for the United States is 161.2; state incidence rates range from 106.1 to 217.1; approximately 58% of states have incidence rates at or above the national rate.
- The death rate for the United States is 28.1; state death rates range from 17.6 to 51.8; approximately 59% of states have death rates at or above the national rate.

Lung cancer:

- **Men**
  - ➤ The incidence rate for the United States is 86.4; state incidence rates range from 38.1 to 133.8; approximately 47% of states have incidence rates at or above the national rate.
  - ➤ The death rate for the United States is 73.5; state death rates range from 32.2 to 112.6; approximately 47% of states have death rates at or above the national rate.
- **Women**
  - ➤ The incidence rate for the United States is 53.7; state incidence rates range from 20.9 to 73.0; approximately 49% of states have incidence rates at or above the national rate.
  - ➤ The death rate for the United States is 41.5; state death rates range from 18.7 to 57.5; approximately 47% of states have death rates at or above the national rate.

Colorectal cancer:

- **Men**
  - ➤ The incidence rate for the United States is 61.3; state incidence rates range from 43.7 to 75.1; approximately 56% of states have incidence rates at or above the national rate.
  - ➤ The death rate for the United States is 23.8; state death rates range from 16.6 to 30.5; approximately 53% of states have death rates at or above the national rate.
- **Women**
  - ➤ The incidence rate for the United States is 44.9; state incidence rates range from 32.2 to 55.0; approximately 47% of states have incidence rates at or above the national rate.

¶Geographic variations are presented for the four most common cancers.

- The death rate for the United States is 16.5; state death rates range from 12.9 to 21.5; approximately 53% of states have death rates at or above the national rate.

Two points should be kept in mind when interpreting the data in this report. First, differences in cancer incidence and death rates among racial and ethnic populations should be interpreted with caution. Recent studies involving cancer mortality data show that death rates for whites and blacks are generally reliable, whereas death rates for Asians/Pacific Islanders, American Indians/Alaska Natives, and Hispanics are underestimated. Studies involving cancer incidence data suggest similar results. Therefore, incidence and mortality data published in this report may be underestimated for some populations. Also, specific subpopulations, which are not presented in this report because of small numbers and possible misclassification, may have higher cancer incidence or death rates than the U.S. population. For example, overall cancer mortality among American Indians/Alaska Natives residing in the Alaska and the Northern Plains regions is higher compared with the U.S. population; the American Indian/Alaska Native population as a whole has lower cancer mortality than the U.S. general population. Indian Health Service coverage of American Indian/Alaska Native populations varies by region and under-represents American Indian/Alaska Natives who live in certain urban areas or who are members of non-federally recognized tribes.

Second, geographic variations in cancer incidence and death rates may be influenced by a number of factors: (1) areas in which a high percentage of the population is screened for cancer will have more cancer cases diagnosed than areas in which a low percentage of the population is screened; (2) rates for certain cancers differ among different racial and ethnic populations (e.g., black men have higher prostate cancer rates than other racial or ethnic groups), and thus when comparing cancer rates across geographic areas, the racial and ethnic makeup of that area should be considered; and (3) the population burden of cancer in a geographic area is determined by the number of cases diagnosed and the number of cancer deaths, not by the age-adjusted rate; therefore, a relatively high or low cancer age-adjusted rate may not be a reflection of the true cancer burden within that geographic area.

United States Cancer Statistics: 2002 Incidence and Mortality provides a basis for states and researchers to describe the variability in cancer incidence and death rates across different populations and to identify certain populations for evidence-based cancer control measures. We will continue to ensure data from all NPCR and SEER registries are of the highest quality. Since the publication of our first report covering diagnosis year 1999, additional registries have contributed data each year, resulting in increased coverage of the U.S. population with every new report. We expect that future reports will include high-quality data from the few remaining state registries, thus allowing a more comprehensive description of the cancer burden across racial, ethnic, and geographic populations in the United States.